

~~21.~~ (Currently Amendment) A method of conducting crash tests using a crash-test

exerting a braking force on said crash-test carriage in a direction opposite said acceleration direction in order to achieve a desired acceleration curve, said braking force being applied on one of said crash-test carriage and said carriage drive apparatus, said braking force ~~being so large~~ controlled so as to accelerate said crash-test carriage in accordance with the desired acceleration curve.

23. (Original) The method of claim 21, wherein said braking force is regulated in a manner dependent upon the real acceleration of said crash-test carriage.

24. (Original) The method of claim 21, wherein said accelerating force is generated pneumatically.

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25. (Original) The method of claim ⁴24, wherein said crash-test carriage has a pressure-generating source associated therewith, said pressure-generating source comprising a pressure chamber, the method further including the steps of:

generating in the pressure chamber, at a maximum braking force, a pressure that
5 corresponds at least to a maximum required acceleration force; and

subsequently gradually reducing said braking force in accordance with the desired acceleration curve.

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26. (Original) The method of claim ⁵25, wherein said pressure chamber has a pressure sensor associated therewith for measuring the pressure therein, said generating of said pressure being controlled via said pressure sensor.

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27. (Original) The method of claim ⁵25, further including the step of lowering the pressure in said chamber to ambient pressure at an end of said crash test.

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28. (Original) The method of claim ¹27, wherein said braking force is hydraulically transmitted to one of said crash-test carriage and said carriage drive apparatus.

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29. (Original) The method of claim ¹27, further including the step of emergency braking of said carriage drive apparatus at an end of said crash test.

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30. (Original) The method of claim ⁹29, wherein said end of said crash test is determined based upon at least one of a path covered by said crash-test carriage, a length of time associated with said crash test and a speed of said crash-test carriage.

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31. (Currently Amended) An apparatus for conducting crash tests using a crash-test carriage, said crash-test carriage being accelerated in accordance with a real deceleration curve to thereby simulate deceleration forces associated with a real collision, said crash-test carriage having a carriage drive apparatus associated therewith, the apparatus comprising:

5 a pressure-generating source having a pressure chamber associated therewith, said pressure chamber having a chamber volume;

a piston located within said pressure-generating source, said piston restricting said chamber volume;

a thrust rod positioned within said pressure-generating source opposite said chamber volume, said thrust rod being operatively coupled with said piston, said thrust rod being configured for acting upon said crash-test carriage;

a compressor ~~for~~ connected to said pressure chamber, said compressor generating a required pressure in said pressure chamber; and

a brake device ~~configured for acting upon~~ in controlling connection with one of said crash-
15 test carriage and said thrust rod, thereby controlling the acceleration force such that said crash-test carriage accelerates in accordance with a desired acceleration curve.

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32. (Original) The apparatus of claim 31, further including a safety valve operatively connected with said pressure chamber, said safety valve restricting a maximum pressure within said pressure chamber.

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33. (Original) The apparatus of claim 31, further including a pressure sensor operatively connected to said pressure chamber, said pressure sensor producing an output pressure signal, said output pressure signal being used to control pressure generation within said pressure chamber.

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34. (Original) The apparatus of claim 32, further including a pressure switch operatively connected with said pressure chamber, said pressure switch having a switch response pressure associated therewith, said safety valve having an associated valve response pressure, said switch response pressure being less than said valve response pressure, said pressure switch being operatively coupled with said compressor, said pressure switch being configured for switching off said compressor when said pressure within said pressure chamber is equal to at least said switch response pressure.

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35. (Original) The apparatus of claim 31, further including a hydraulic unit coupled with said brake device, said brake device being hydraulically actuated by said hydraulic unit.

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36. (Original) The apparatus of claim 35, further including a hydraulic valve associated with said brake device and said hydraulic unit, said hydraulic valve being configured for regulating a braking force generated by said brake device.

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37. (Original) The apparatus of claim 21, wherein said braking device generates a braking force, said braking force being regulated in a manner dependent upon an acceleration of said crash-test carriage.

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38. (Original) The apparatus of claim 21, wherein said braking device generates a braking force, said braking force being regulated in a manner dependent upon a desired brake pressure of said brake device.

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39. (Original) The apparatus of claim 21, wherein said thrust rod loosely engages said crash-test carriage, said thrust rod thereby being configured for displacing said crash-test carriage.

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40. (Original) The apparatus of claim 21, wherein said brake device configured for acting upon said thrust rod.

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41. (Original) The apparatus of claim 21, wherein one said compressor and a corresponding said pressure chamber together comprise an acceleration unit, at least one said acceleration unit being provided for generating a required acceleration force.

